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SEVENTH AMENDMENT TO THE MOTOR VEHICLE CODE IMPLEMENTING REGULATION OF 1967
[7. Novelle zur KDV 1967]

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Federal Ministry of Transportation Regulation of July 22, 1975, by which the Motor Vehicle Code Implementing Regulation of 1967 is modified.

On the basis of the Motor Vehicle Code of 1967, BGBl. [Federal Law Gazette] 267, in the version of Federal Codes BGBl. 285/1971 and 286/1974 and of announcement BGBl. 240/1970, the following -- concerning Art. I, nos. 5 through 10 and 30 through 34 relating to tractors, in agreement with the Federal Minister of Agriculture and Forestry, no. 14 relating to § 26a, in agreement with the Federal Minister of the Interior,

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no. 14 relating to liability documentation for vehicles with foreign plates, in agreement with the Federal Minister of Finance and the Federal Minister of Justice,

concerning Art. II, sec. b, relating to tractors, in agreement with the Federal Minister of Agriculture and Forestry -- is decreed:

Article I

The Motor Vehicle Code Implementing Regulation of 1967, BGBl. 399, in the version of Regulations BGBl. 77/1968, 204/1968, 376/1971, 476/1971, 177/1972 and 356/1972 and of announcements BGBl. 256/1970, 257/1970 and 201/1971, is amended as follows:

1. In § 1c, par. 9, the period at the end shall be replaced by a semicolon, and the following shall be added:
"vehicles with a suitable, rigid body and/or cab permanently joined to the vehicle shall be equipped with upper mounts for shoulder straps."

2. In § 1c, the following shall be added at the end as a new par. 10:

"(10) The following shall be considered safety belts or straps suited to the type of vehicle design in the sense of § 4, par. 5, of KFG [Motor Vehicle Code] 1967:

a. In vehicles with suitable upper mounts for shoulder straps (par. 9), pelvis straps in conjuction with shoulder straps (3-point straps) or straps equivalent to these in their protection to the user with regard to vehicle design,

b. In vehicles not coming under sec. a, pelvis straps."

3. In § 1e, par. 1, the last sentence shall read:

"The weight of the crash helmet shall not exceed 1 kg."

4. In § 18, par. 4 shall read:

"(4) In tractors in classes I and II, in trucks and in self-propelled machinery, the devices for producing acoustical and optical warnings may also be actuated only in such a manner that the driver holds on to the steering mechanism with only one hand at the same time."

5. In § 19a, par. 2, sec. a shall read:

"a) a seat area with a depth of not less than 34 cm and not more than 42 cm, with a width at the level of the upholstery of not less than 40 cm, and with a width measured at a level of 8 cm above seat reference point S (Enclosure 3b, no. I, no. 1) of not less than 45 cm; the seat area shall be inclined by not less than 3° and not more than 10° to the rear under load over the entire pivoting range (Enclosure 3b, no. I, no. 2); its forward section shall be rounded,"

6. In § 19a, par. 2, sec. d, the term "respiration-active" shall be omitted.

7. In § 19b, par. 1 shall read:

"(1) Tractors whose maximum width exceeds 120 cm and which have either a front jointed cross-shaft axle or a knuckle steering system or just three wheels, and trucks shall have a protected area about the driver's seat ensured by a safety device (safety frame, cab). The safety device shall be constructed and installed in such a manner that if the vehicle overturns, a dangerous penetration of parts of the vehicle or of the protective device due to their deformation or of parts of a flat surface

on which the overturned vehicle is lying, into the protected area, should not be expected and that the driver can exit the vehicle in any position it assumes. The protected area (Encl. 3c, no. III, Fig. 6) shall be the area above the driver's seat delimited by the following:

a. Planes parallel to the reference plane and each 250 mm from the latter, to a height of 300 mm above seat reference point S (Enclosure 3b, no. I, no. 1);

b. Parallel planes that extend from the upper edge of the plane defined in sec. a to a height of 900 mm above seat reference point S and are inclined so that the upper edge of the plane on each side on which lateral impact is to be applied is at least 100 mm from the reference plane;

c. A horizontal plane 900 mm above seat reference point S;

d. A plane perpendicular to the reference plane and passing through a point 900 mm above seat reference point S and through the rearmost point of the seat;

e. A cylindrical surface with generatrices perpendicular to the reference plane and with a radius of curvature of 120 mm that is tangent to the planes defined in secs. c and d;

f. A cylindrical surface with generatrices perpendicular to the reference plane, with a radius of curvature of 900 mm, and with its axis of rotation 150 mm in front of seat reference point S; this surface is tangent to the plane defined in sec. c and extends to a vertical plane lying 400 mm in front of the axis of rotation;

g. An inclined plane perpendicular to the reference plane, beginning at the forward edge of the surface defined in sec. f and passing the steering wheel at a distance of 40 mm;

h. A plane perpendicular to the reference plane and 40 mm in front of the steering wheel;

i. A horizontal plane through seat reference point S.

The reference plane referred to in secs. a, b, d, e, f, g and h is approximately parallel to the longitudinal midplane of the vehicle through seat reference point S and the center of the steering wheel. This reference plane is assumed to move horizontally with the seat and steering wheel during impacts but remains approximately parallel to the longitudinal midplane of the vehicle or perpendicular to the floor of the cab if the latter has cushioned suspension."

8. In § 19b. par. 2, the expression "15 cm" shall be replaced with "25 cm."

9. In § 19b, par. 3, the words "and trucks" shall be omitted.

10. In § 19b, the following shall be added to the end of par. 4: "These cabs shall be designed, constructed or equipped in such a manner that the driver can exit the vehicle through a suitable opening in any position assumed by the vehicle; if square, this opening shall be at least 60 cm x 60 cm; if rectangular, at least 47 cm x 65 cm; if round, it shall have a diameter of at least 70 cm."

11. In § 22, par. 2, the following shall be added at the end: "For vehicles brought into Austria, the certificate from a customs office as specified in § 37, par. 2, sec. d, of the Motor Vehicle Code of 1967 shall be shown to the specialist during individual inspection."

12. In § 22b, no. 6, sec. a, subsec. aa. shall be deleted.

13. In § 22b, no. 6, sec. c shall read:

"c. the limits specified in §§ 14, 16, 18 and 19 of the Motor Vehicle Code of 1967 and in §§ 12, 13a, 14 through 16 and 52 through 54 for the distances of headlights, lamps and reflectors from the road surface or from the extreme edges of the vehicle shall be maintained,".

14. The following shall be added after § 26 as new §§ 26a and 27a:

'Signs, graphic representations, lettering, panels and flags on vehicles

"§ 26a. Displaying signs, graphic representations, lettering, panels or flags on motor vehicles and trailers other than those on which they must be borne persuant to the Motor Vehicle Code of 1967, to the regulations promulgated on the basis of this code, or to the European Agreement on the International Shipment of Hazardous Goods on the Highway (ADR), BGBl. 522/1973, or may be displayed in accordance with § 54, KFG 1967 is prohibited; articles which, on the basis of their characteristics and appearance, can easily be taken for such signs, graphic representations, lettering, panels or flags shall not be mounted on vehicles."

"Proof of Liability Coverage for Foreign Vehicles"

"§ 27a. (1) The proof required persuant to § 62, par. 2, of KFG 1967 for the liability coverage specified in § 62, par. 1, of KFG 1967 has been furnished for vehicles bearing official plates from the following countries:

1. Belgium, with the exception of

a. Vehicles with duty-exempt plates,

b. Private vehicles of members of the armed forces stationed in the Federal Republic of Germany, and their dependents,

c. NATO vehicles;

2. Federal Republic of Germany, including West Berlin, with the exception of

a. Vehicles with duty-exempt plates,

b. Self-propelled machinery with a maximum speed of 20 km/h,

c. Private vehicles of members of the armed forces stationed in the Federal Republic of Germany, and their dependents,

d. NATO vehicles;

3. Denmark, with the exception of vehicles registered on the Faroe Islands;

4. German Democratic Republic, with the exception of

a. Vehicles with duty-exempt plates,

b. Self-propelled machinery and vehicles for the handicapped with a maximum speed of 20 km/h

c. Motor-driver bicycles;

5. Finland;

6. France, with the exception of military vehicles subject to international agreements;

7. Great Britain (including Northern Ireland, Isle of Man and Channel Islands, excluding Gibraltar), with the exception of

a. Vehicles for the handicapped with up to 254 kg (= 5 cwt) gross weight,

b. NATO vehicles;

8. Ireland, with the exception of

a. Vehicles with duty-exempt plates,

b. Trailers;

9. Yugoslavia;

10. Luxemburg, with the exception of

a. Vehicles with duty-exempt plates after the end of the year indicated on the plate,

b. Agricultural tractors and self-propelled machinery,

11. Monaco;

12. Netherlands, with the exception of

a. Vehicles with duty-exempt plates,

b. Private vehicles of members of the armed forces stationed in the Federal Republic Germany, and their dependents,

c. Vehicles of armed forces of the Federal Republic of Germany stationed in the Netherlands,

d. Vehicles of employees of the Supreme Headquarters of Allied forces in Central Europe,

e. NATO vehicles;

13. Norway;

14. Sweden;

15. Switzerland and Liechtenstein, with the exception of

a. Vehicles with duty-exempt plates after the end of the year indicated on the plate,

b. Motor-driven bicycles and wheelchairs;

16. Czechoslovakia, with the exception of

a. Motor-driven bicycles,

b. Vehicles of Allied troops stationed in Czechoslovakia, their civilian employees and dependents;

17. Hungary, with the exception of vehicles whose plates begin with the letters DT or CK.

"(2) For the countries listed in par. 1, nos. 1 through 3, 5 through 14 and 17, par. 1 shall also be applied to motor-driven bicycles kept permanently in these countries, even if required by their regulations to bear no plate or only an insurance plate."

15. In § 58, par. 1, no. 2, sec. d shall read:

"d. when partially hoisted vehicles are towed using a towing shaft with a rigid towbar . . . . . 40 km/h,"

16. In § 62, par. 1, the expression "§ 16, par. 1, sec. b," in no. 2 shall be replaced by "§ 16, par. 1, of KFG 1967."

17. In § 63a, par. 1, the expression "rear mirrors" shall be replaced by "rearview mirrors."

18. In § 67a, the word "or" at the end of sec. b and the period at the end of sec. c shall each be replaced by a comma, and the following shall be added as new sec. d:

"d. a motor vehicle subject to § 4, par. 5, of KFG 1967 is not equipped with safety belts/straps."

19. In Enclosure 1a, the expression in parentheses after the heading shall read as follows:

"(joint German translation for Austria, the Federal Republic of Germany and Switzerland, January 22, 1971, Federal Ministry of Commerce, Trade and Industry, line 182.790-II/20-1971, and for Austria, the Federal Republic of Germany, the German Democratic Republic and Switzerland, September 20, 1974, Federal Ministry of Transportation, line 57.307-IV/6-74)"

20. In Enclosure 1a, the following shall replace no. 5.2.1.1.4.:

"5.2.1.1.4. The test shall be performed three times, subject to the provisions under 5.2.1.1.5. The quantities of carbon monoxide and hydrocarbons determined in each test shall be below the values (L) listed in the following table for the applicable reference weight:

a Bezugsgewicht (Pr) kg	b Kohlenmonoxid g/Prüfung	c Kohlenwasserstoffe g/Prüfung
Pr ≤ 750	80	6·8
750 < Pr ≤ 850	87	7·1
850 < Pr ≤ 1020	94	7·4
1020 < Pr ≤ 1250	107	8·0
1250 < Pr ≤ 1470	122	8·6
1470 < Pr ≤ 1700	135	9·2
1700 < Pr ≤ 1930	149	9·7
1930 < Pr ≤ 2150	162	10·3
2150 < Pr.....	176	10·9

Key: a. Reference weight
b. Carbon monoxide, g/test
c. Hydrocarbons, g/test

5.2.1.1.4.1. For each of the pollutants specified under 5.2.1.1.4., however, one of the three results of measurements may exceed the limit permitted above for the reference vehicle by not more than 10% if the arithmetic mean of the three results lies below the permissible limit. If the permissible limits for more than one pollutant are exceeded, these excesses may occur either in the same test or in different tests.

5.2.1.1.5. The number of tests specified under 5.2.1.1.4. shall be reduced under the conditions established below, where V_1 indicates the result of the first test and V_2 the result of the second test for each of the pollutants specified under 5.2.1.1.4.

5.2.1.1.5.1. Only a single test shall be performed if $V_1 \leq 0.70$ L for the two pollutants specified.

5.2.1.1.5.2. Only two tests shall be performed if $V_1 \leq 0.85$ L for the two pollutants specified but $V_1 > 0.70$ L for at least one of the pollutants. In addition, V_2 shall satisfy the conditions $V_1 + V_2 < 1.70$ L and $V_2 < L$ for each of the pollutants specified."

21. In Enclosure 1a, the following shall be added at the end of no. 5.2.1.2.2.:

"These specifications shall be checked on the basis of the data contained in Enclosure 5 under all operating conditions resulting from actuation of the various adjusting devices accessible to the user."

22. In Enclosure 1a, the following shall be inserted after no. 5.2.1.3.3.:

"7. Extension of Approval

"7.1. Vehicle Types with Different Reference Weights

Under the following conditions, approval may be extended to vehicle types that differ from the approved types only in reference weight.

7.1.1. Approval may be extended to vehicle types whose reference weight merely causes immediately adjacent gyrating masses to be used.

7.1.2. If the reference weight of the vehicle types for which application is being made for the extension of approval results in the use of a flywheel that achieves a higher equivalent gyrating mass than the flywheel corresponding to the vehicle types already approved, the extension of approval shall be issued.

7.1.3. If the reference weight of the vehicle types for which application is being made for the extension of approval results in the use of a flywheel that achieves a lower equivalent gyrating mass than the flywheel corresponding to the vehicle types already approved, the extension of approval shall be issued if the quantities of pollutants obtained with the vehicle types already approved do not exceed the limits which are permitted for the vehicle types for which application is being made for the extension of approval.

7.2. Vehicle Types with Different Overall Gear Ratios

Under the following conditions, the approval issued for a vehicle type may be extended to those vehicle types that differ from the approved type only in their overall gear ratios:

7.2.1. The ratio $E = (V_2 - V_1)/V_1$ shall be determined for each gear ratio that is used in test type I, where V_1 and V_2 are the speeds of the approved vehicle type and the vehicle type for which application is being made for extension, respectively, at an engine speed of 1000 rpm.

7.2.2. If $E \leq 5\%$ for each ratio, approval shall be extended without repeating the tests of type I.

7.2.3. If $E > 5\%$ for at least one ratio and $E \leq 10\%$ for each ratio, the tests of type I shall be repeated; however, they may be performed in a laboratory designated by the manufacturer, subject to agreement by the responsible approving authorities. The test record shall be submitted to the responsible test station.

7.3. Vehicle Types with Different Reference Weights and Different Overall Gear Ratios

The approval issued for a vehicle type may be extended to vehicle types that differ from the approved type only in reference

weight and overall gear ratio if the provisions under 7.1. and 7.2. are satisfied.

7.4. Remark

If provisions under 7.1. through 7.3. are the basis for the approval of a vehicle type, this approval shall not be extended to other vehicle types.

"8. Compliance in Manufacture

8.1. Every vehicle that bears a label of approval persuant to this regulation shall be identical to the approved vehicle type with regard to components that affect the emission of pollutant gases by the engines.

8.2. In order to check the compliance required under par. 8.1., a vehicle shall be taken from production that bears a label of approval persuant to this regulation.

8.3. In general, the equivalence of this vehicle to the approved type shall be checked on the basis of the description contained in the form relating to approval and its enclosures and, if necessary, one vehicle shall be subjected to all or several tests of types I, II, and III in accordance with par. 5.2.

8.3.1. The following shall apply to checking compliance with regard to test type I:

8.3.1.1. A vehicle taken from production shall be subjected to the test under 5.2.1.1. However, the following limits shall apply in place of those under 5.2.1.1.4.:

a Bezugsgewicht Tr kg	b Kohlenmonoxid g/Prüfung L1	c Kohlenwasserstoffe g/Prüfung L1
Tr ≤ 750	96	8·8
750 < Tr ≤ 850	105	9·3
850 < Tr ≤ 1020	112	9·6
1020 < Tr ≤ 1250	120	10·4
1250 < Tr ≤ 1470	140	11·1
1470 < Tr ≤ 1700	162	11·9
1700 < Tr ≤ 1930	178	12·6
1930 < Tr ≤ 2150	195	13·3
2150 < Tr	211	14·1

Key: a. Reference weight
b. Carbon monoxide, g/test
c. Hydrocarbons, g/test

8.3.1.2. If the vehicle taken from production does not meet the provisions of 8.3.1.1., the manufacturer may call for random-sample measurements to be performed on several vehicles taken from production; the random sample shall include the vehicle originally tested. The manufacturer shall determine the size n of the sample. With the exception of the vehicle originally taken from production, the vehicles shall be subjected only to a test of type I. The result to be used for the vehicle originally tested is the arithmetic mean of the result of three tests of type I performed on this vehicle. The arithmetic mean $\bar{x}$ of the results obtained from the sample shall then be determined for each air pollutant. Series production shall be considered in compliance with these regulations if the following condition is satisfied:

$$\bar{x} + k \cdot S \leq L^1$$

[1] Translator's note: $S^2 = \Sigma (x - \bar{x})^2/(n - 1)$, where x represents one of n readings.

where L is the permissible limit under 8.3.1.1. for the particular air pollutant, and k is a statistical factor that is a function of n and is given in the following table:

n	2	3	4	5	6	7	8	9	10
k	0·973	0·613	0·489	0·421	0·376	0·342	0·317	0·296	0·279
n	11	12	13	14	15	16	17	18	19
k	0·265	0·253	0·242	0·233	0·224	0·216	0·210	0·203	0·198

If $n \geq 20$, then $k = 0.860/\sqrt{n}$

8.3.2. The provisions of par. 5.2.1.2.2. and 5.2.1.3.2. shall be observed in performing a test of type II or type III on a production vehicle.

8.3.3. As an exception to the provisions of 3.1.1. in Appendix 4, the inspection station assigned to test for production compliance may, if agreed upon with the manufacturer, perform the tests of types I, II and III on vehicles that have been operated for less than 3000 km."

23. In Enclosure 1a, Appendix 4, no. 5.1.4. shall read:

"5.1.4. A check shall be made as to whether the brake setting so obtained applies to other intermediate conditions between idle and maximum speed in the driving cycle. If necessary, the vehicle shall be driven at a medium setting."

24. In Enclosure 1a, Appendix 4, no. 6.3. shall read:

"6.3. Operation of Choke

6.3.1. Manual Choke

The choke shall be released as quickly as possible, always prior to acceleration from 0 to 50 km/h. If this cannot be adhered to,

the time of actual release shall be indicated. The method by which the choke is set shall correspond to the manufacturer's information.

6.3.2. Automatic Choke

If the vehicle is equipped with an automatic choke, it shall be operated in accordance with the manufacturer's information concerning adjustment of the choke and concerning kick-down operation during cold starting. If the time for kick-down is not indicated, it shall be performed 13 seconds after starting the engine."

25. In Enclosure 1a, Appendix 4, the following shall be added to no. 7.2.1., at the end:

"If, due to the characteristics of the gas-collecting device on the bag, the gases emitted during testing are not completely mixed, they shall be mixed prior to analysis, e.g. with the aid of a circulating pump."

26. In Enclosure 1a, Appendix 4, no. 8.1., the last definition shall read:

"PH: partial pressure of water vapor in millimeters Hg."

27. In Enclosure 1a, Appendix 5, no. 2.2. shall read:

"2.2. The test of type II shall be performed immediately after the fourth driving cycle in the test of type I with the engine idling, without the use of the cold-starting system. Immediately prior to each additional measurement of carbon monoxide content, a driving cycle of test type I shall be performed in accordance with 2.1. of Appendix 4."

28. In Enclosure 1a, Appendix 5, the following shall be inserted after no. 2.4.:

"2.5. Idle Adjustment Mechanisms

Definition

Idle adjustment mechanisms as referred to in this regulation are parts with which engine idle conditions can be changed and which can be operated with the tools described in 2.5.1.1. In particular, mechanisms used to set the fuel/air mixture for whose adjustment it is necessary to remove the safety devices that normally prevent any intervention by untrained individuals shall not be considered idle adjustment mechanisms.

2.5.1.1. Tools that may be used to operate the idle adjustment mechanisms: screwdrivers (for slotted and Phillips screws), wrenches (box-end, open-end or adjustable wrenches), pliers, Allen wrenches.

2.5.2. Determination of Measurement Points

2.5.2.1. At the beginning, a measurement shall be performed under the adjustment conditions used in the test of type I.

2.5.2.2. A sufficient number of characteristic positions shall be determined for each adjustment mechanism with continuous settings.

2.5.2.3. The level of carbon monoxide in exhaust gases shall be measured in all possible settings of the adjustment mechanism; in the case of adjustment mechanisms with continuous settings, however, only the settings determined under 2.5.2.2. shall be covered.

2.5.2.4. The results of the test of type II shall be considered satisfactory if one of the two following conditions is satisfied:

2.5.2.4.1. The values measured pursuant to 2.5.2.3. do not exceed the limits.

2.5.2.4.2. The maximum value obtained when one of the adjustment mechanisms is changed continuously while the remaining adjustment mechanisms remain unchanged does not exceed the limit; this condition shall be satisfied

at all possible settings of the adjustment mechanism that do not have continuous settings.

2.5.2.5. The possible settings for the adjustment mechanisms shall be limited as follows:

2.5.2.5.1. first, by the higher of the following two values:

the lowest engine rpm during idle;

the idle rpm recommended by the manufacturer, minus 100 rpm;

2.5.2.5.2. second, by the lowest of the following three values:

the highest engine rpm that can be achieved by operating the idle adjustment mechanism;

the idle rpm recommended by the manufacturer, plus 250 rpm;

the engagement rpm for an automatic clutch.

2.5.2.6. In addition, idle settings that do not permit satisfactory operation of the engine shall not be used as measurement points. In particular, for engines with several carburetors, all carburetors shall have the same settings."

29. In Enclosure 1a, Appendix 6, the following shall be inserted after no. 5.7.7.:

"6. Alternative Test Method

6.1. The vehicle shall be considered in compliance with these regulations if, for each of the operating conditions specified in 3.2., a check has been made as to whether the return system or the crankcase ventilating system is able to evacuate all gases that can enter the atmosphere from the crankcase.

6.2. The provisions of 3 and 5.7. shall also apply to this method.

6.3. Instructions for Performing the Test

6.3.1. General Procedure

6.3.1.1. Ventilation inlets and outlets on the engine shall be left unchanged.

6.3.1.2. Pressure in the crankcase shall be measured at the oil dipstick port. Pressure shall be measured using an inclined-tube water manometer.

6.3.1.3. The vehicle shall be considered in compliance with these regulations if the pressure measured in the crankcase does not exceed atmospheric pressure during measurement under any of the operating conditions specified in 3.2.

6.3.1.4. If crankcase pressure exceeds atmospheric pressure under one of the operating conditions specified in 3.2., the additional test specified in 6.3.2. shall be performed upon the manufacturer's request.

6.3.1.5. In testing by the procedure described in 6.3.1., crankcase pressure shall be measured with a precision of ± 1 mm H_2O).

6.3.2. Procedure for Additional Test

6.3.2.1. Ventilation inlets and outlets on the engine shall be left unchanged.

6.3.2.2. A soft bag with a capacity of about 5 liters, inpervious to crankcase gases, shall be applied to the oil dipstick port.

This bag shall be empty prior to each measurement.

6.3.2.3. The bag shall be closed prior to each measurement. It shall be connected to the crankcase for 5 minutes under each of the operating conditions specified in 3.2.

6.3.2.4. The vehicle shall be considered in compliance with these regulations if no visible filling of the bag occurs under any of the operating conditions specified in 3.2.

6.3.3. Remark

6.3.3.1. If the engine is designed in such a way that testing in accordance with 6.3.1. and 6.3.2. is not feasible, the measurements in 6.3.2. shall be performed with the following modifications:

6.3.3.2. Prior to testing, all openings that are not used for the return of gases shall be sealed.

6.3.3.3. The bag shall be applied at a suitable branch, which may not cause an additional pressure drop, on the return line of the crankcase ventilating system, right at the return connection to the engine."

30. In Encl. 3b, no. I, no. 2, the first three sentences shall be deleted.

31. In Enclosure 3b, no. I, no. 2, sec. d, the first tnrough fourth sentences shall read:

"For the measurement of vertical acceleration, an acceleration pickup shall be mounted on a flat, rigid plate of diameter 30 cm on the seat. The plate shall be laid in the center of the dish of the seat, between the seat and driver. It shall be upholstered on the top with an elastic material approximately 2 cm thick.

aa. A tractor fitted with this seat shall be driven over a path of 100 m in accordance with no. II, Table 2, at 15 km/h $\pm$ 0.5 km/h, at a suitable higher speed if a resonance peak occurs, and a path of 35 m in accordance with no. II, Table 3, at 5 km/h $\pm$ 0.15 km/h, at a suitable higher speed if a resonance peak occurs;

bb. A truck fitted with this seat shall be driven over a 100 m path in accordance with no. II, Table 2, at 10 km/h ± 0.3 km/h, at a suitable higher speed if a resonance peak occurs, and a path of 35 m in accordance with no. II, Table 3, at 3.3 km/h ± 0.1 km/h, at a suitable higher speed if a resonance peak occurs."

32. In Enclosure 3b, no. I, no. 3, the second sentence shall be replaced by the following:

"The seat, adjusted to a driver weight of 100 kg, shall be oscillated 30 mm upward and 30 mm downward from the center of its free path of oscillation at a frequency of 2 Hz, applied 20 cm in front of the seat reference point in the longitudinal midplane. If necessary, the shock absorber shall be cooled."

33. In Enclosure 3b, no. III, the entry in the table under sec. c shall read:

"adjustable at least between 40 cm and 45 cm."

34. Enclosure 3c shall read:

"Enclosure 3c

(§ 19b)

"Testing Protective Devices on Tractors and Trucks

"I. General Provisions

The protective device submitted for testing shall be mounted on a vehicle of a type for which the protective device is designed. The test shall be accepted with reference to the vehicle or the vehicle type for which the protective device is designed. For performance of the test, those parts of the protective mechanism that the driver can remove shall be removed; the driver's seat shall be placed in the rearmost position for normal

operation of the vehicle and in its highest setting if this is separately adjustable; if the driver's seat is equipped with a spring-suspension device, this device shall be set to 68 kp[1], and the load shall be 55 kp.

"II. Performance of Testing:

Testing shall cover the following:

1. Pendulum Impact Test:

A solid rectangular-solid weighing 2000 kg, whose impact surface consists of a square with sides of 680 mm ± 20 mm shall be struck against the frame. The pendulum weight shall be designed so that its center of gravity remains unchanged. It shall be suspended from a pivot located 6 m above the ground in such a manner that the height of the weight can be adjusted easily and safely (no. III, Fig. 1). The vehicle shall be anchored so that it cannot move.

A. Testing Tractors:

The first impact shall be applied to the rear of the protective device. The second impact shall be applied to the front of the protective device as specified for the compression test in accordance with no. 2, sec. a; the third impact shall be applied to the side of the vehicle that can be expected to be most highly distorted. The impact applied to the rear shall be applied at the corner opposite the side impact; the impact applied to the front, at the corner closest to the side impact. In the case of a rounded frame, impact shall be applied in the vehicle's longitudinal midplane.

[1][Translator's note: 1 kp = force equivalent to the weight of a 1 kg mass.]

a. Impact Applied to the Rear:

The vehicle shall be placed in such a manner for this that the pendulum weight strikes the frame at the time at which the front of the weight and the suspension chains are at an angle of 20° to the vertical; if the frame is at a greater angle to the vertical at the point of weight contact (impact point), however, the impact side of the weight shall be set parallel to the impact point by an additional suspension chain, while the chain shall remain at an angle of 20°. The impact point shall lie on that part of the frame that is expected to make first contact with the ground if the vehicle overturns to the rear. The height of the weight shall be set so that it does not pivot about the impact point (no. III, Fig. 2). The vehicle shall be lashed down with cables whose attachment points are located 2 m behind the rear axle and 1.5 m ahead of the front axle. These attachment points shall be located in the plane in which the center of gravity of the pendulum swings; if more than one cable are used, the resultant force shall lie in this plane. Steel cables with thicknesses of 12.5 mm to 15.0 mm shall be used, with tensile strengths of 11,000 to 12,600 kp/cm^2. The tires may not be filled with water. The following provisions shall apply to tire pressure and flattening of the tires caused by lashing:

	Gauge pressure in tires (bars)	Flattening (mm)
four-wheel-drive tractors with front and rear wheels of the same size:		
front	1.0	25
rear	1.0	25

	Gauge pressure in tires (bars)	Flattening (mm)
four-wheel-drive tractors with front wheels smaller than the rear wheels:		
front	1.5	20
rear	1.0	25
two-wheel-drive tractors:		
front	2.0	15
rear	1.0	25

After attachment of the cables, a wooden beam 15 cm x 15 cm thick shall be jammed in front of the rear wheels. The pendulum shall be brought to a suitable starting position; the height of its center of gravity above its position at impact shall be determined by the following formula for this purpose: $H = 2.165 \cdot 10^{-8} \cdot G \cdot L^2$ (H is height in mm, G is the tare of the vehicle, equipped with a protective device, without ballast, in kg, and L is maximum wheelbase in mm). For vehicles whose front axle load is greater than the rear axle load, the value H shall be calculated in accordance with sec. b if this yields a greater value for H. The pendulum weight shall then be released, so that it strikes the frame. The release mechanism shall be set up in such a manner that it does not cause the pendulum weight to be orientated obliquely relative to the suspension chains at the instant of release.

b. Impact Applied to the Front:

This test shall be performed in the same manner as described in sec. a. Attachment shall correspond to that specified in sec. a; however,

the wooden beam shall be located behind the rear wheels (no. III, Fig. 3). The energy of impact shall be obtained from the formula $H = 125 + 0.02 \cdot G$ (H is height in mm, G is the tare of the vehicle equipped with the protective mechanism, without ballast, in kg). Impact shall be applied to that part of the frame that is expected to make first contact with the ground if the vehicle overturns laterally during forward travel.

c. Impact Applied to the Side:

The vehicle shall be set up in such a manner that the pendulum weight strikes the frame when the impact surface of the weight and the suspension chains are vertical; if the frame is not vertical at the impact point, however, the front of the weight shall be set parallel to the frame at the point of contact by means of an additional suspension chain. The chain shall remain vertical. Impact shall occur at that part of the frame that can be expected to make first contact with the ground if the vehicle overturns laterally. This point shall lie in the plane that is perpendicular to the vehicle's longitudinal midplane and passes through the center of the driver's seat set in its medium position. The height of the weight shall be adjusted in such a manner that it does not rotate about the impact point. The rear wheel of the vehicle shall be lashed down on the side of impact. Lashing tension on the cable shall be adjusted in the same manner as in sec. a. After lashing, a 15 cm x 15 cm thick beam shall be jammed against the wheel located opposite to the weight, rammed solidly against the tire. This wheel shall be backed up by a beam that is fastened to the ground in such a manner that it remains against the wheel during impact. The length of the beam shall be chosen so that it forms an angle between 25° and 40° to the

horizontal in the position described above. In addition, the length of the beam shall be 20 to 25 times the height of its cross section, and its width shall be two to three times the height of its cross section (no. III, Fig. 4). The pendulum weight shall be brought to a suitable starting position; the height of its center of gravity above that at the instant of impact shall be determined by the following formula for this purpose: $H = 125 + 0.150 \cdot G$ (H is height in mm, G is the tare of the vehicle equipped with the protective device, without ballast, in kg).

B. Testing Trucks:

a. General

Calculation of the magnitude of impact and compression stress shall be based on the tare, in kg, of the heaviest version of that part of a truck on which the protective device is mounted. This weight is called G in the formulas given. For trucks in which the angle between the front and rear sections is limited to less than $\pm 10°$ by a stop, the magnitude of impact and compressive stress shall be determined on the basis of total tare; thus this weight shall be substituted into the formulas in place of G. The tires shall have a gauze pressure of 1.5 bars.

b. Impact Applied to the Side:

Impact shall be applied to the side on which the driver's seat is located. The truck shall be set in such a manner that when the pendulum weight is hanging free, the chains by which the pendulum weight is suspended are vertical and the pendulum plane containing the impact surface passes through the center of the seat. The truck shall be lashed down at the front and rear axles by one cable each, with tighteners, on the side to

which impact is applied. Steel cables 12.5 mm to 15.0 mm thick shall be used that have tensile strengths of 11,000 kp/cm^2 to 12,600 kp/cm^2. The cables shall be tightened until the associated tire is flattened by 15 mm. The truck shall be supported and lashed down in the vicinity of the pivot point between front and rear sections. The front-axle wheel located opposite to the side receiving pendulum impact shall be secured against skidding by a wooden beam of 15 cm x 15 cm cross section and by an oblique beam wedged between the rim of the wheel and a lashed-down wooden beam. The length of the oblique beam shall be chosen such that it makes an angle between 20° and 45° with the horizontal. Its length shall be 20 to 25 times the height of its cross section, and its width, two to three times the height of its cross section. The pendulum weight shall be brought to a suitable starting position; the height of its center of gravity above its position at impact shall be determined with the following formula for this purpose: $H = 0.225 \cdot G$ (H is height in mm, G is weight in accordance with sec. a, in kg).

c. Impact Applied to the Front:

Impact shall be applied to the front edge of the protective device on the driver's-seat side. The vehicle shall be set up for this in such a manner that the pendulum weight strikes the frame at the instant the front side of the weight and of the suspending chains are at an angle of 20° to the vertical. The pendulum plane shall be displaced to the outer edge of the protective device, provided this is feasible without the danger of pendulum dislocation. Sec. b, third through sixth sentences, shall apply with appropriate changes, but the lashing cables shall be applied approximately

in the plane of pendulum motion. A wooden beam of 15 cm x 15 cm cross section shall be wedged behind the front wheels. The rear wheel on the side opposite the side of impact shall be secured against lateral skidding by an identical wooden beam. Half the value specified in sec. b shall be used for the drop height of the pendulum weight.

2. Compression Tests:

A cross beam 25 cm wide shall be used for these tests (no. III, Fig. 5). The force applied in each of the tests shall be twice the tare, without ballast, of the vehicle equipped with the protective device; for trucks, the applied force shall be determined in accordance with no. 1, part B, sec. a. The vehicle shall be supported in such a manner that there is no weight on the tires.

a. Test from Above on the Rearmost Part of the Frame:

This test shall be performed only after the test specified in no. 1, part A, sec. a, or part B, sec. c;

b. Test from Above on the Front Part of the Frame:

This test shall be performed after the last pendulum impact test. If the front part of the protective device does not withstand the compressive force, this force shall be applied to that part that is not deformed during lateral 180° overturn of the vehicle with the overturned vehicle lying on its front end and on the protective device.

3. Determination of the Results of Testing Under Nos. 1 and 2:

During the lateral impact test (no. 1, part A, sec. c and part B, sec. b), the difference between maximum elastic deformation and permanent

deformation of the protective device shall be determined at a height of 90 cm above the seat when loaded and adjusted in accordance with no. I, last sentence. This shall be determined with a horizontal rod fastened to the upper part of the protective device as shown in no. III, Fig. 7, on which a tight-fitting ring has been placed that is supported on a vertical reference bar. After impact, the ring on the horizontal rod shall not be more than 25 cm from the reference bar. During elastic deformation of the protective device, too, no part of it shall penetrate into the protected area.

4. Measurement of Noise Level:

Measurement shall be performed on a flat concrete or macadam pavement with the vehicle unloaded or occupied only by the driver, without ballast. The vehicle shall be subjected during measurement to a towed load that shall be increased from zero to that value at which the noise level reaches it peak. After each increase in load, the measurement shall be made only when the noise level has stabilized. Measurements shall be made in each of the vehicle's forward gear speeds; the rpm control level shall be completely depressed for this. The load system for the vehicle shall be far enough from it that the noise level is at least 10 dB (A) below the measured peak during the measurements. A noise level meter complying with Enclosure 1c, par. 2, shall be used for the measurements. The microphone of the noise level meter shall be mounted on an open frame helmet, 5 cm to the side of the driver's forehead at the level of his eyebrows, with its axis horizontal and oriented forward and parallel to the vehicle's longitudinal midplane. During the measurements, the microphone shall be mounted alternately on

both sides of the driver. The maximum measured value shall be used as the noise level in accordance with § 19b, par. 4.

III. Figures

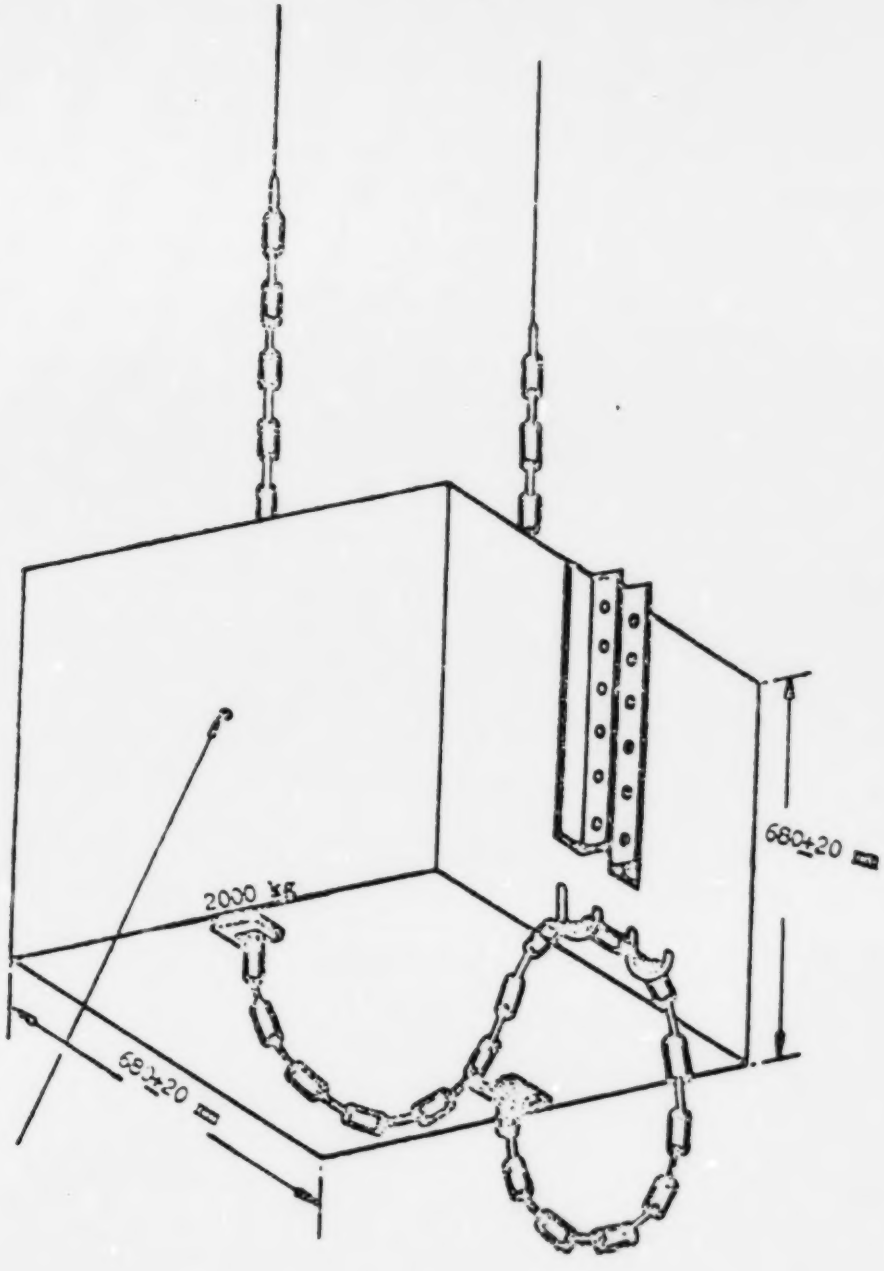

Fig. 1.

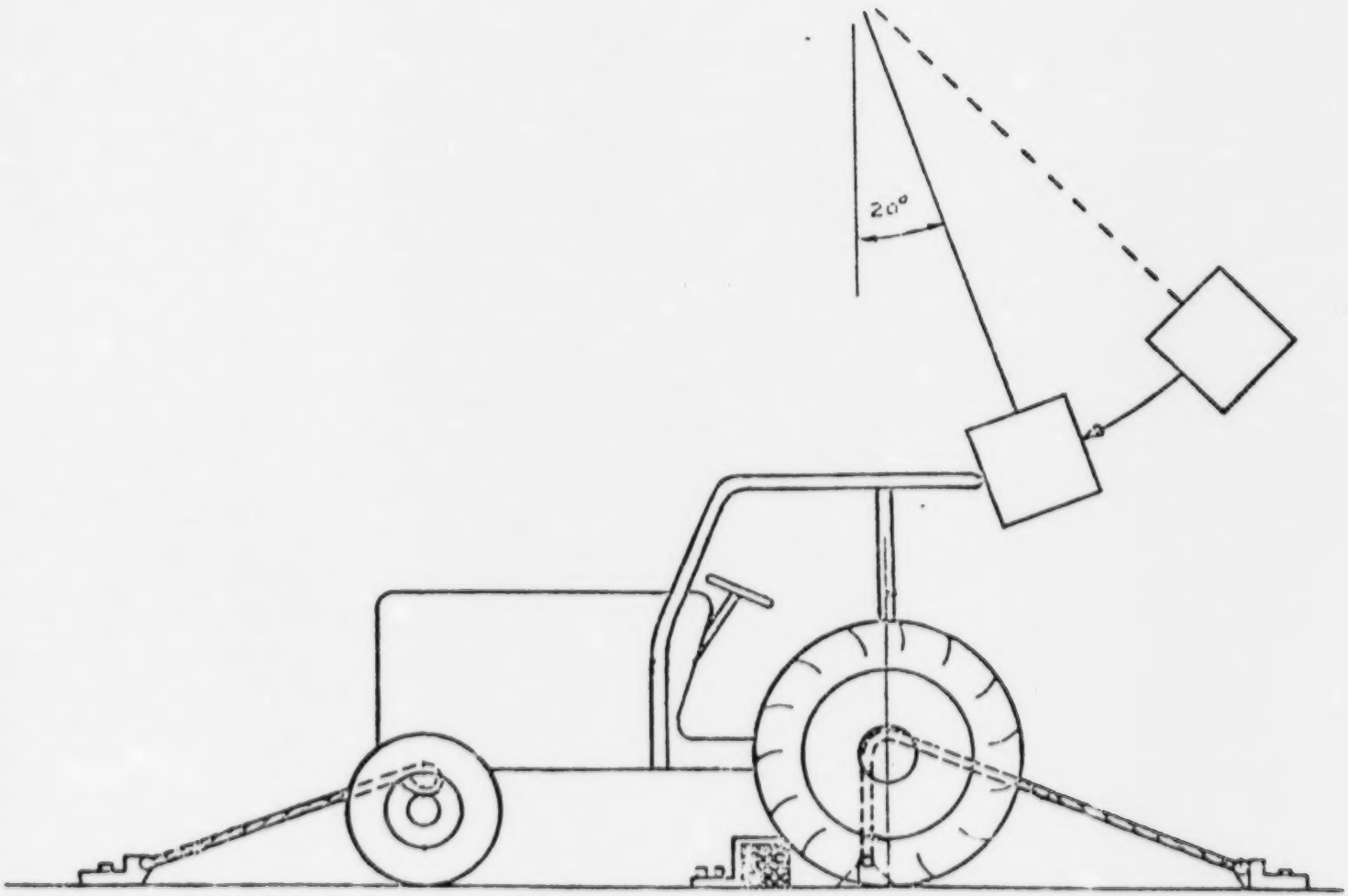

Fig. 2.

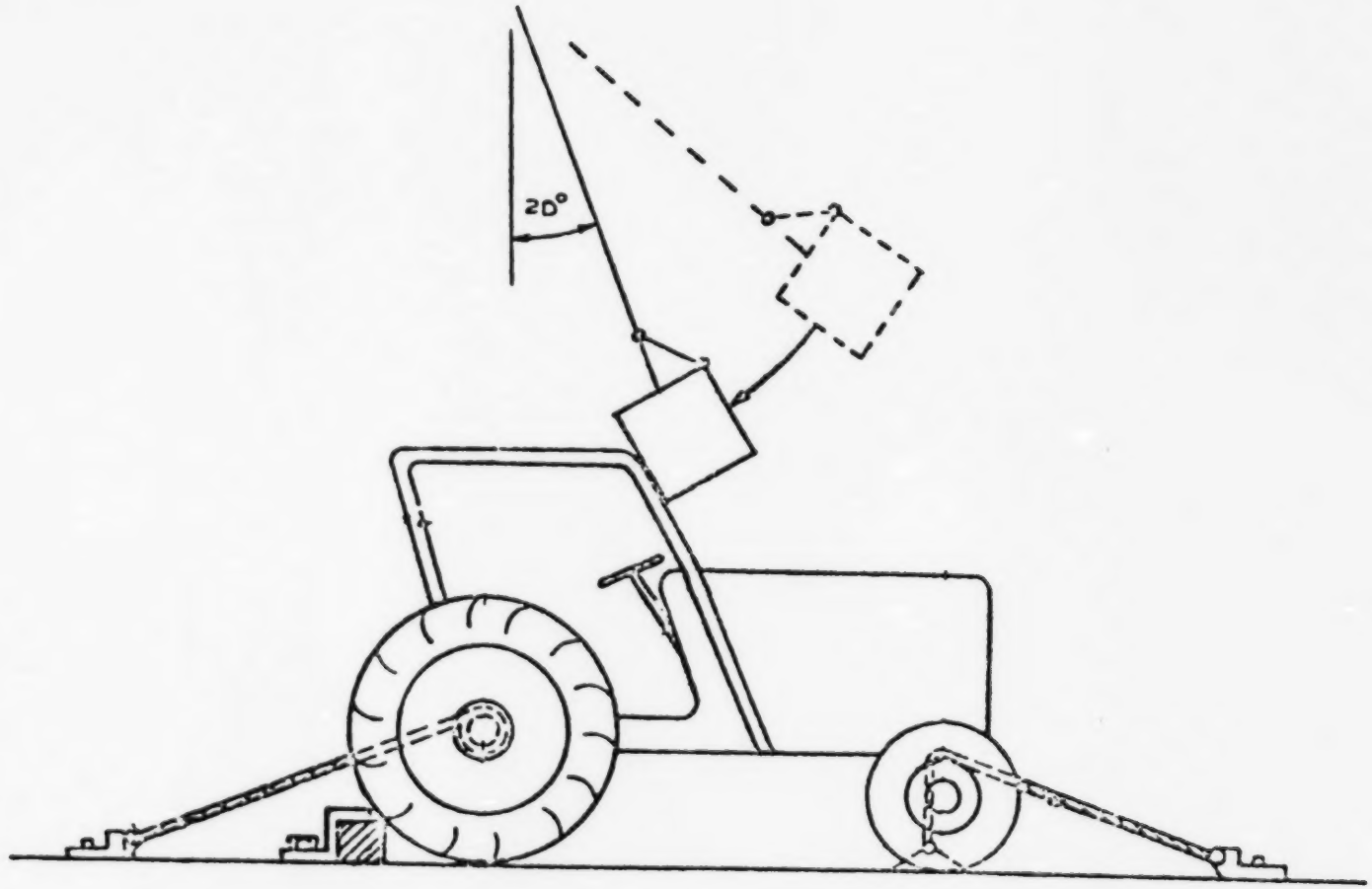

Fig. 3.

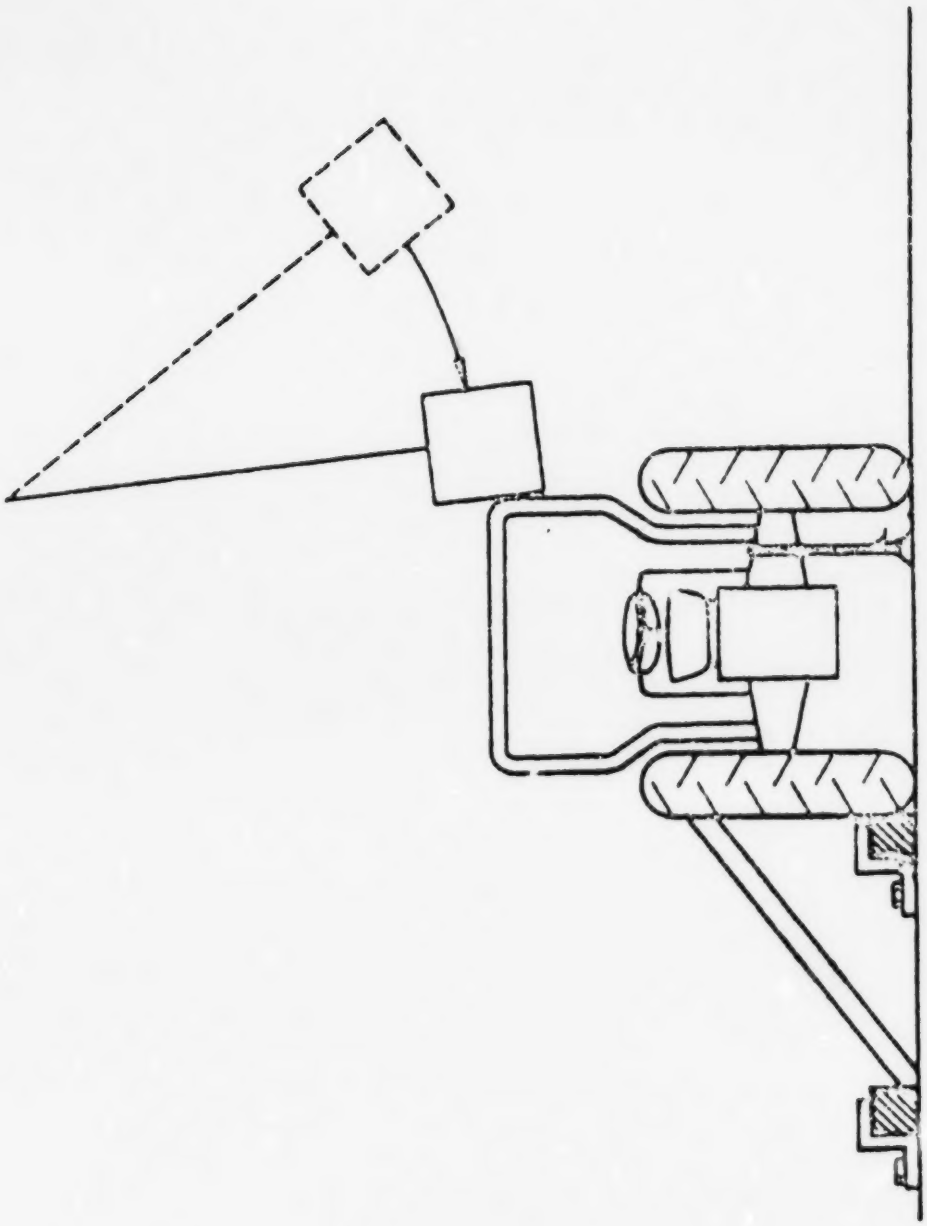

Fig. 4.

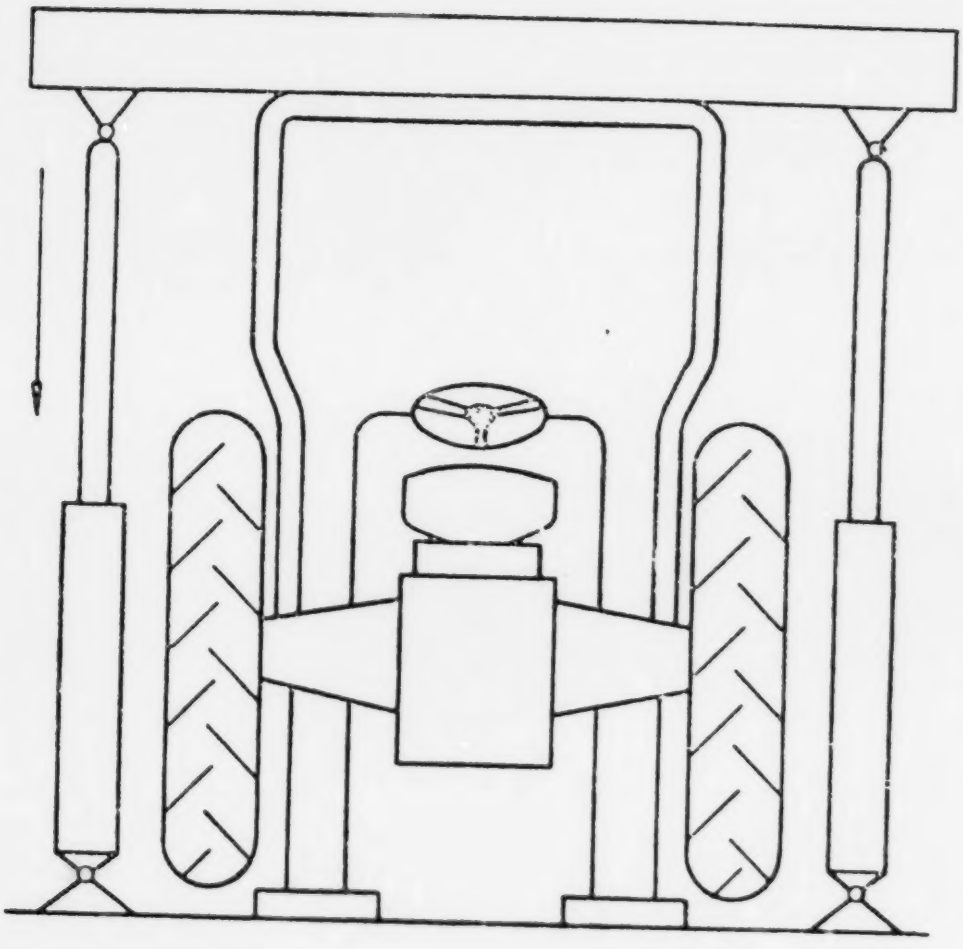

Fig. 5.

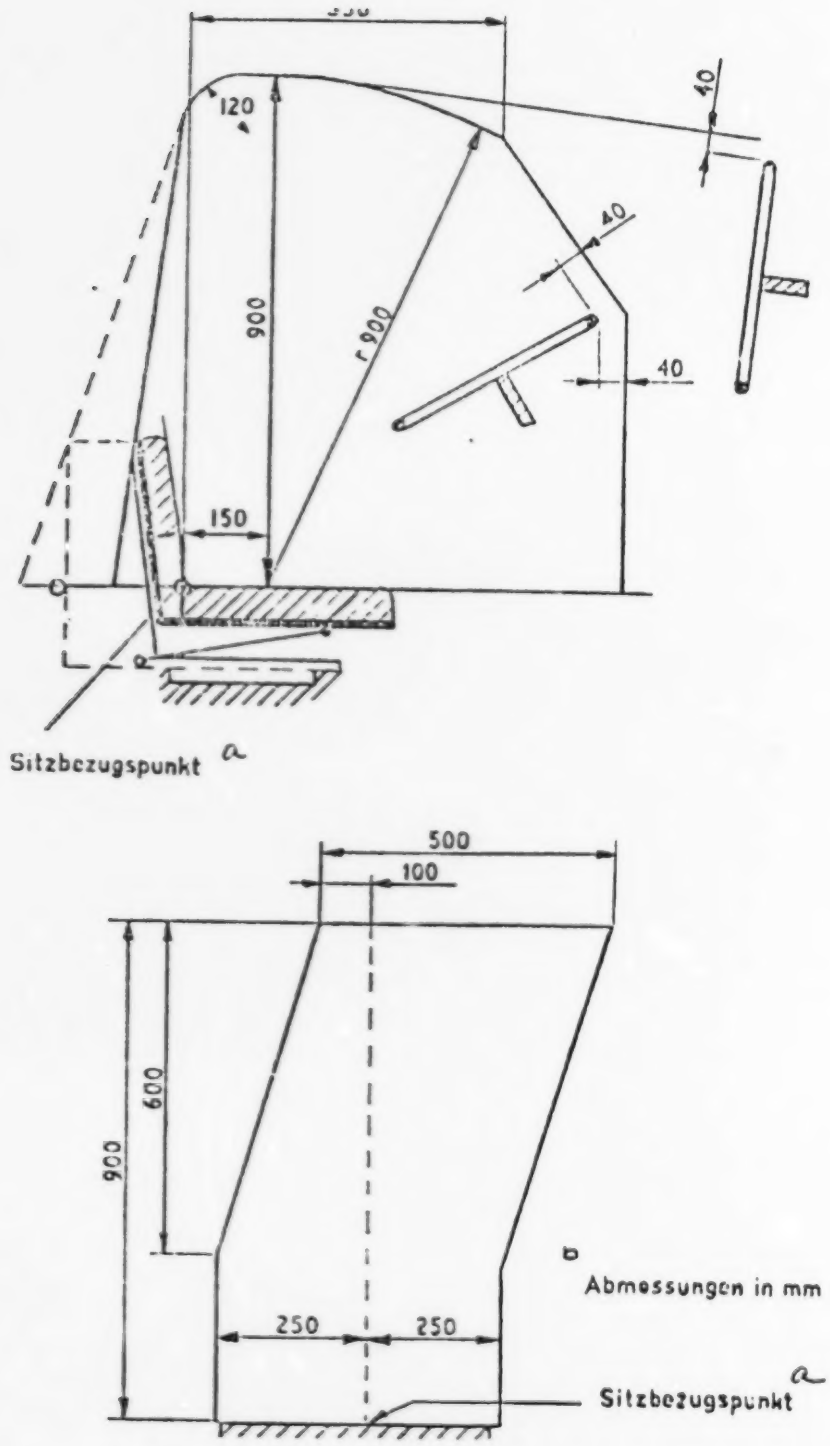

Fig. 6.
Key: a. Seat reference point b. Dimensions in mm

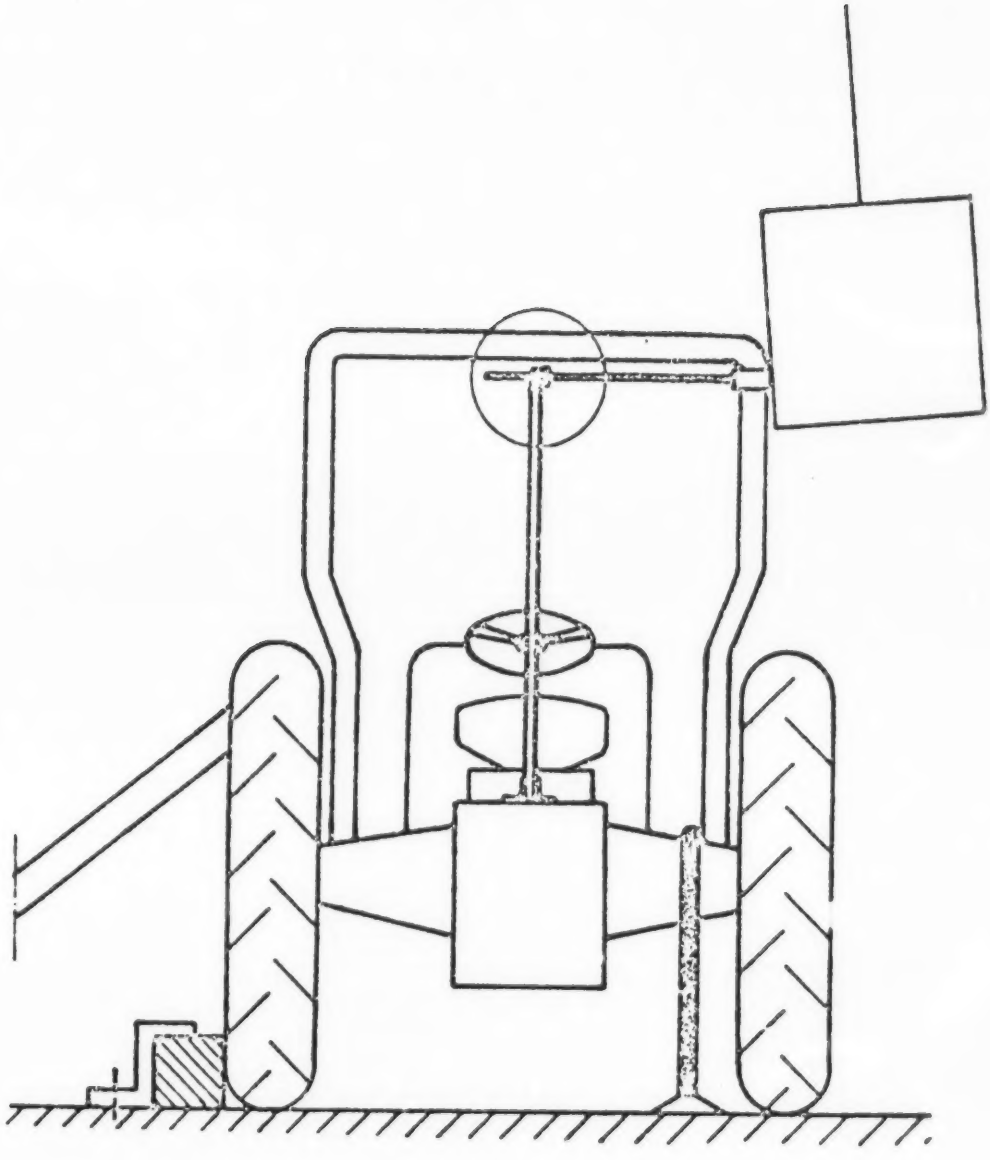

Fig. 7.

Article II

Vehicles which, though meeting previous regulations, do not meet this regulation, shall be exempted from Art. I,

a. no. 2 (§ 1c, par. 10), if they were first registered prior to the effective date of these provisions,

b. no. 1 (§ 1c, par. 9), nos. 5 through 10 and 30 through 34 (§§ 19a and 19b, plus Enclosures 3b and 3c), if their models or they themselves were approved prior to the effective date of this regulation,

c. nos. 20, 23 through 26 and 29 (Enclosure 1a), if they were first registered prior to October 1, 1975 or if they were brought into Austria prior to September 1, 1975,

d. nos. 21, 27 and 28 (Enclosure 1a), if they were first registered prior to October 1, 1976.

Article III

(1) This regulation shall be effective, except as otherwise provided for in par. 2, at the end of the date of promulgation.

(2) Other effective dates:

1. October 1, 1975

a. Art. I, no. 1 (§ 1c, par. 9) concerning the anchoring of safety belts/straps with respect to trucks with a maximum permissible gross weight of not more than 3500 kg,

b. Art. I, nos. 20, 22 through 26 and 29 (Enclosure 1a) concerning the emission of air-polluting gases;

2. October 1, 1976

Art. I, nos. 21, 27 and 28 (Enclosure 1a), concerning the emission of air-polluting gases.

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